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ABSTRACT

An intelligence test for use with rural Filipinos was developed using 25 general information questions. The questions bear on experiences common to most rural Filipinos. The methods of development and analyses are described. It is suggested that this strategy could be used with other peasant groups where an assessment of intelligence is needed in order to rank members of one or adjacent communities. This technique does not enable one to compare groups from markedly different cultural backgrounds. (Author)

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A Culture-Fair Information Test of Intelligence

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The Impact of Modernization on the Philippines
The Pennsylvania State University
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There are many occasions in social science research when one would like to know something about the level of intelligence of respondents. As a rule one has to settle for educational attainment as an index of ability. However, opportunities for education differ greatly. Furthermore, marked differences can be observed even among those who have completed only Grade IV. One would like to know for instance, whether differences in intelligence affect understanding enough to produce differences in acceptance of and successful application of new farming methods. Are more intelligent people more likely to adopt improved health and sanitation practices? What is the relationship between leadership and ability?

Experience has shown many times that tests of intelligence developed in North America or Europe are inapplicable in other settings because the tasks, materials, and conditions of administration are so alien to the experience of most of the world's citizens. Attempts have been made, with varying degrees of success, to develop culture-free tests. Inasmuch as intelligence is in part

a reflection of an individual's experience, a culture-free test would have to be unrelated to an individual's day-to-day behavior. But we are often most concerned with effectiveness in day-to-day behavior. Furthermore, so-called culture-free tests turn out to show differences between groups in the same way that cuturally-loaded tests do. The answer to the problem of cultural influences on test performance may lie in developing a test which draws on the experience of prospective subjects and standardizing the test for the task at hand. This would permit ordering and comparing subjects within a population, which is usually the function for which a test is needed. Whether two groups on different continents differ is another question requiring a different strategy.

Both common sense and empirical data suggest that people who are considered more intelligent have more information. A test of information is included as part of many standard test batteries since the score on this part correlates well with the total score. The Information subtest of the Wechsler Adult Intelligence Scale showed the highest correlation with the total score, the verbal score, and the performance score as well, of the 11 subtest components of that scale (Wechsler 1955, p. 16). Several classical quick-assessment techniques, such as the Kent E-G-Y, have been essentially information tests. Similarly, information items are often included as part of routine psychiatric evaluations. Drawing on these observations, we undertook to develop a brief Information Test of Intelligence for use in the rural Philippines.

Development of the test

Influenced by the Information subtest of the Wechsler scales, we sought items with which all subjects might reasonably have had a chance to become acquainted. No time limit was imposed for the response. The questions were posed in simple sentences. All of the questions were items one might reasonably ask an adult; no one was embarrassed by being asked questions which teachers might ask a six-year-old. While we did not tell our respondents that we were trying to measure their intellectual ability, we made no attempt to disguise the fact that we were asking a series of questions and that the subjects might or might not know the answer.

Development of the items went through three steps: After explaining the task and the strategy to assistants, we developed 50 or more questions which were modified, clarified, tried out on friends, and either rejected or selected for inclusion in a preliminary form. The initial form of 35 items was given to approximately 25 rural citizens and the items were examined again for ambiguities, relevance, and difficulty level. Twenty-five items were selected for the present evaluation.

The present study

In the course of collecting data for another study (Guthrie 1970), the present test was given to 151 rural residents of Tagalog-speaking areas. These were adult men and women between 25 and 50 years of age

living in one of four towns or adjacent barrios, as discussed in the larger study. While they are not necessarily representative, they constitute a satisfactory sample of persons, with two to ten years of school, for the development of this test. Each item was presented orally and the subject's answer was recorded verbatim. The questions were asked in English or Tagalog, whichever language had been used in the interview. Following the scoring criteria of Table 1, the items were scored and the total number correct was calculated.

Each subject's total score and a right-wrong indication for each item were punched and the test was evaluated using a specially developed computer program. The final wording of each item, correct answer, per cent of subjects who gave the correct answer, and the correlation of each item with the total score are shown in Table 1. In Table 2 are the summary statistics on the test. In Table 3 is the Tagalog translation of the items.

Discussion

Assuming face validity of the items as a group, it would appear that this is a reasonably satisfactory test for research purposes. The reliability estimate of .67 is minimally acceptable, the mean and variability are satisfactory. It is reasonable to suppose that the reliability could be improved by refining scoring criteria for some of the items. It must also be borne in mind that the inter-

viewers were quite inexperienced in collecting data of this sort.

We conclude that we have a potentially useful instrument for a variety of field applications. Equally important, we have demonstrated a strategy of instrument development which others may find useful.

References

Wechsler, D. Manual for the Wechsler Adult Intelligence Scale. New York: Psychological Corporation, 1955.

Guthrie, G. M. The psychology of modernization in the rural Philippines. Manila: Ateneo de Manila University Press, IPC Papers No. 8, 1970.

Table 1

Items, scoring criteria and item statistics for an Information Test of Intelligence

	Item	Correct answers[1]	Correlation with total score	Per cent passing
1.	Who is the president of the Philippines?	Marcos (as of 1968)	.49	95
2.	Who was president before him?	Macapagal (as of 1968)	.79	79
3.	Who is the governor of this province?		.61	87
4.	Who is the Vice-Governor?		.66	50
5.	Who is the Philippine national hero?	Rizal	.68	76
6.	Where does the sun rise?	east	.43	95
7.	How many wheels does a tricycle have?	three	.42	75
8.	Why do people usually pull the weeds out of their rice fields?	space for rice plants water for rice plants nutrients for rice plants so the rice will grow better	.44	76

[1]One or more correct alternatives, or a number from the range offered here constitutes a correct answer.

Table 1 continued

Item	Correct answers	Correlation with total score	Per cent passing
9. If five pencils cost fifty centavos, how many pencils can one peso buy?	Ten	.47	87
10. A woman puts out some wet clothes on a sunny day. Where does the water go that was in the clothes?	some notion of evaporation or loss due to the sun	.35	57
11. Why do some farmers burn their fields?	fertilize, kill weeds, clear for next planting	.33	81
12. A piece of meat left uncovered for a couple of days has plenty of worms in it. Where do the worms come from?	flies	.24	72
13. What is a nail made of?	iron, steel, copper	.63	70
14. If you set a hen on some eggs, how many days does it take for the eggs to hatch?	20, 21, or 22 days	.22	36
15. What is soap made from?	coconut oil	.47	71
16. Where does the water in a coconut come from?	the trunk, from the ground	.44	48
17. How many years does a carabao (water buffalo) live?	15-35 years	.36	42
18. If the moon rises at ten o'clock this evening, when will it rise tomorrow evening?	10:30 to 11:30 in the evening	.26	54

Table 1 continued

	Item	Correct answers	Correlation with total score	Per cent passing
19.	Why do fishermen use a light in catching fish?	attract the fish	.53	35
20.	How many years does it take a coconut plant to bear nuts?[1]	6 to 9[1] years	.32	55
21.	What is flour made from?[1]	wheat, casava, corn	.55	72
22.	Where does cooking oil come from?	coconut, vegetables	.54	97
23.	Why should a citizen pay his taxes?	support government activities	.54	65
24.	How often do we have elections for mayor?	every 4 years	.30	85
25.	Rizal was born in 1861. If he were alive, how old would he be today?	107 (as of 1968)	.58	40

Table 2

Summary statistics on information

Test of Intelligence

The mean difficulty of the items on this test = 0.679

The average item-total score correlation for the questions in this test = 0.466

Standard error of correlation = 0.082

Estimated interitem correlation = 0.217

Kuder-Richardson 20 Reliability - 0.670

Test Mean = 16.98 Variance = 12.90 Standard Diviation = 3.59

Standard error of measurement = 2.06

Table 3

Tagalog translation of Information Test of

Intelligence

1. Sino ang pangulo ng Pilipinas?
2. Sino ang pangulo na sinundan niya?
3. Sino ang gobernador sa provinciang ito?
4. Sino ang bise-gobernador?
5. Sino ang pambansang bayani ng Pilipinas?
6. Saan sumisikat ang araw?
7. Ilan ang gulong ng tricycle?
8. Bakit kalimitang binubunot ang damo sa palayan?
9. Kung nagkakahalaga ng 50 centimos ang 5 lapiz ilang lapiz ang mabibili ng piso?
10. Ang isang babae ay nagsampay ng mga basang damit. Saan nagpunta ang tubig na nasa damit?
11. Bakit sinisilaban ng mga mangbubukid o magsasaka ang kanilang palayan?
12. Kung ang isang kapirasong karne ay naiwanan ng walang takip ito ay magkakaroon ng maraming uod pagkaraan ng ilang araw. Saan ho nanggagaling ang mga uod?
13. Ano ang ginagawang pako?
14. Kung iyong palilimliman ang ilang itlog ng manok, ilang araw ito bago mapisa?
15. Ano ang ginagawang sabon?
16. Saan nanggegaling ang tubig sa buko?
17. Ilan taon ang buhay ng kalabaw?
18. Kung sumikat ang buwan ng alas diyes ngayon gabi anong oras sisikat bukas ng gabi?

Table 3 continued

19. Bakit gumagamit ng ilaw ang mga mangingisda sa kanilang pangingisda?

20. Ilang taon bago bumunga ang niyog?

21. Ano ang ginagawang harina?

22. Ano ang ginagawang langis?

23. Bakit kailangan magbayad ng buwis ang mga mamamayan?

24. Tuwing kailan tayo nagkakaroon ng eleccion para sa alcalde?

25. Si Rizal ay ipinanganak noon 1861. Kung buhay pa siya, ilan taon kaya siya ngayon?